REMARKS

Applicant respectfully requests the Examiner's reconsideration of the present application. No claims have been cancelled. Claims 3 and 25 have been amended. No new claims have been added. Therefore, claims 1-56 are presented for examination.

Drawings

The Examiner has objected to the drawings as being sloppy. Applicant has submitted replacement sheets for Figures 1-10, and respectfully requests that the objection be withdrawn.

Information Disclosure Statement

The Examiner stated that the listing of references in the specification is not a proper information disclosure statement. Applicant respectfully submits herewith an Information Disclosure Statement citing the article "Latent Semantic Indexing, A Probabilistic Analysis."

In the Office Action, the Examiner also made reference to "U.S. Patent references submitted on the diskette." Applicant respectfully asks that the Examiner clarify which references the Examiner refers to, so Applicant may appropriately cite them; Applicant's own records do not appear to indicate that that any references were submitted to the PTO on diskette. The Examiner's assistance in this matter is appreciated.

Allowable Subject Matter

Applicant thanks the Examiner for indicating that claims 3-9, 14-20, 25-31, 37-43, and 48-54 contain allowable subject matter if rewritten to include all the limitations of the claims from which they each originally depended. However, because Applicant believes that the all of the present claims are in condition for allowance, Applicant has not amended the claims as suggested by the Examiner.

Rejections Under 35 U.S.C. §103(a)

Foltz in view of Hazlehurst

Claims 1, 2, 10-13, 21-24, 32-36, 44-47, 55 and 56 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Foltz et al., U.S. Patent No. 6,356,864 ("Foltz") in view of Hazlehurst et al., U.S. Patent No. 6,289,353 ("Hazlehurst"). Applicant respectfully submits that the present claims are patentable over the combination of Foltz and Hazlehurst.

Foltz discloses using Latent Statistical Analysis (LSA) to analyze a corpus of representative text, and thereafter to evaluate a sample text, such as an essay. Reference texts (e.g. articles on a subject-matter or authoritative text that students used to learn the subject-matter) are used to create a data matrix that defines the domain of knowledge. This data matrix is used to form a semantic-space matrix. Using the semantic-space matrix, a vector representation of a standard reference text used to create the data matrix is computed. A pseudo-object vector is also generated for a student's essay (ungraded sample text) using the semantic-space matrix. The degree of similarity between the ungraded sample text and the standard reference text is then determined by comparing the pseudo-object vector representation of the ungraded sample text to the vector representation of the standard text. A grade is then assigned to the sample text based on the degree of similarity. Foltz's process grades essays in a fair and objective manner because the process utilizes the same process for each essay. (Foltz, col. 4, lines 19-21). In other words, each student's essay is graded using the same semantic-space (i.e., the same domain of knowledge defined by a specific set of reference texts).

Hazlehurst discloses producing a vector space by applying a statistical learning algorithm and a clustering process to a corpus of text documents. The vector space evolves based upon user feedback, changes in user profiles, and new sources of information (i.e., new documents).

Independent claims 1, 12, 23 and 46 include the limitation of adapting the Latent Semantic Analysis (LSA) space to reflect the change in the language. The Examiner has admitted that Foltz does not teach this limitation. However, the Examiner has

asserted that it would have been obvious to modify Foltz to adapt an LSA information space to reflect a change in language, as taught by Hazlehurst, to "provide more relevant document retrieval over time." Applicant respectfully submits that there is no motivation to combine Foltz and Hazlehurst as proposed by the Examiner, because the combination would render Foltz unsatisfactory for its intended purpose.[1]

Foltz's grading process achieves fairness and objectivity by grading several essays against a common semantic-space. In other words, once the semantic-space is created from a set of reference texts, the semantic-space necessarily must remain unaltered. Modifying Foltz such that the semantic-space is altered based upon new documents, as taught by Hazlehurst, would render Foltz unsatisfactory and inoperable for its intended purpose of providing objectivity and uniformity in grading. If different semantic-spaces were used to grade essays for the same assignment, Foltz's purpose of providing fairness and objectivity in grading would be defeated. Therefore, Applicant submits that there is no suggestion or motivation to combine the teachings of Foltz with those of Hazlehurst, and as such, the Examiner has not established *prima facie* obviousness.

Independent claim 34 includes the limitation of means for processing the new document using latent semantic adaptation. Applicant's Specification defines latent semantic adaptation as a process of using latent semantic analysis (LSA) to capture the semantic patterns appearing in a training corpus of language by mapping them into an LSA space and <u>continually adapting</u> the LSA space with new semantic patterns.[2] Thus, for at least the reasons discussed above for independent claims 1, 12, 23 and 46, there is no suggestion or motivation to combine the teachings of Foltz with Hazlehurst as proposed by the Examiner.

Accordingly, it is respectfully submitted that independent claims 1, 12, 23, 34, 46 and claims 2, 10-11, 13, 21-22, 24, 32-33, 36, 44-45, 47, 55 and 56 that depend from them, are patentable over the combination of Foltz and Hazlehurst for at least the

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[1] "If a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." (MPEP 2143.01, citing *In re Gordon*, 733 F.2d 900, 221 USPQ1125 (Fed. Cir. 1984)).
[2] Specification, page 7, line 26 – page 8, line 2.

reasons discussed above. Therefore, Applicant respectfully requests the withdrawal of the rejection of the claims under 35 U.S.C. §103(a).
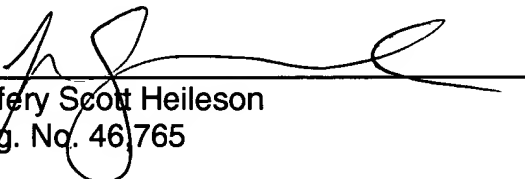
Conclusion

Applicant respectfully submits that in view of the amendments and discussion set forth herein, the applicable rejections have been overcome and the pending claims are in condition for allowance.

If the Examiner determines the prompt allowance of the claims could be facilitated by a telephone conference, the Examiner is invited to contact Scott Heileson at (408) 720-8300.

Authorization is hereby given to charge our Deposit Account No. 02-2666 for any charges that may be due. Furthermore, if an extension is required, then Applicant hereby requests such extension.

Respectfully submitted,
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

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